

REMARKS

Applicants thank the Examiner for acknowledging the claim for priority under 35 U.S.C. § 119, and receipt of a certified copy of the priority document submitted December 28, 2000.

Status of the Application

Claims 1-10 and 12-61 are all the claims pending in the Application, as claims 34-61 are hereby added to more fully define the current invention, and claim 11 has been cancelled without prejudice or disclaimer. Claims 1-33 have been rejected.

Anticipation Rejections of Claims 1-33 Under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1-33 under 35 U.S.C. § 102(b) as being anticipated by Mizumoto et al. (US 5,351,226; hereinafter “Mizumoto”). This rejection is respectfully traversed.

Mizumoto

Mizumoto discloses a system for reading a compact disc as shown in FIG. 5. This system operates as shown in FIGS. 6, 7, 9, 10 and 11. Specifically, a pickup unit is moved to a lead in area of a disc while the spindle motor is stopped (step S1), then the laser is focused (step S2), and an RF level is detected at a lead in area of the disc (step S5). If a high RF level is detected, then the system determines that the disc is a CD (step S6), if a low level is detected, the system transfers to the pickup transfer routine (step S7). During these operations, the disc remains stationary (see col. 8, lines 34-35).

The pickup transfer routine (step S7) then determines if the pickup can be transferred toward the outer side of the disc (step S21), and if so, incrementally transfers the pickup towards the outer side of the disc (step S23), and detects an RF signal (step S25). If a high level is detected, the pickup transfer routine (step S7) then attempts to determine an outer boundary of the RF signal (steps S26-S28). If the pickup has not detected a high RF signal, and it cannot be transferred toward the outer side any longer, the disc is ejected (S22). During these operations, the disc remains stationary (see col. 8, lines 63-64).

Assuming a high RF signal has been detected during the pickup transfer routine (step S7), the pickup is returned to the inner side of the disc (step S8), the spindle motor is turned on to rotate the disc (step S9), and the track information is read and reproduced (S10-S12).

A second embodiment essentially eliminates the determination of the outer boundary of the RF signal (steps S26-S28 in the first embodiment), but is otherwise similar to the first embodiment.

The Examiner's Position

The Examiner takes the position that all of the features recited in the independent claims are disclosed by Mizumoto.

Mizumoto Does Not Teach or Suggest All of The Features of the Independent Claims

In contrast to the Examiner's position, Applicants respectfully submit that Mizumoto fails to teach or suggest: (1) "a controller" that "instructs said reading device to focus said reproduction signal on said disc as said disc turns," as recited in claim 1; or (2) "a controller that focuses a reproduction signal ... on said disc as said disc rotates," as recited in claim 12; or (3)

“attempting to focus said reproduction signal in said disc, as said disc rotates,” as recited in claims 13 and 24; or (4) “focusing said reproduction signal on said disc as said disc rotates,” as recited in claims 23 and 33.

Specifically, Mizumoto clearly discloses that the disc is not rotating during any focusing operation, as disclosed in FIGS. 6 and 9, (*i.e.*, the “focus locked” step S2, S32).

Thus, Applicants respectfully submit that Mizumoto fails to teach or suggest all of the features of the independent claims, and therefore request the Examiner to withdraw this rejection.

Further, Applicants respectfully submit that the rejected dependent claims 2-10, 14-22 and 25-32 are allowable, *at least* by virtue of their dependency from claims 1, 13 and 24, respectively.

Accordingly, Applicants respectfully request that the Examiner withdraw this rejection.

New Claims

New claims 34-61 are hereby added to more fully define the instant Application.

New claims 34-51 are fully supported *at least* by FIG. 3 (and its supporting description). Applicants respectfully submit that Mizumoto fails to teach or suggest any increasing of any gain of amplifier 4 during the disclosed reproduction process.

Thus, Mizumoto cannot teach or suggest *at least* that: “said gain is increased to a second gain level” (see claim 34); “a gain of said amplifier is increased to provide a second amplified signal” (see claim 37); “increasing said gain to a second gain level” (see claims 40 and 46); or

“increasing a gain of said amplifier to provide a second amplified signal” (see claims 43 and 49), as recited in these claims.

New claim 52 is fully supported at least by FIG. 2 (and its supporting description). As discussed above, Applicants respectfully submit that Mizumoto fails to teach or suggest any ability for the disclosed reproduction process to include any focusing feature on a turning disc.

Thus, Mizumoto cannot teach or suggest at least the feature of “focusing a reading beam on a first position on said disc as said disc turns,” recited on claim 52.

New claim 53 is fully supported at least by FIG. 2 (and its supporting description). Applicants respectfully submit that Mizumoto fails to teach or suggest any ability to determine whether a disc is abnormal when a pickup unit is arranged in a program area of the disc which is adjacent to the lead in area of the disc. Specifically, as shown in FIGS. 7 and 10, Mizumoto only determines that the disc is empty when the pickup unit arrives at the outside circumference of the disc, *i.e.*, not in a program area that is adjacent to the lead in area.

Thus, Mizumoto cannot teach or suggest *at least* the feature of “arranging a pickup unit beneath a disc so that it is movable between a first position corresponding to a lead-in area of the disc, and a second position corresponding to a program area of the disc adjacent to the lead in area;” and “if the amplitude of the amplified signal is less than the predetermined value when the pickup is located at both the first position and the second position, classifying the disc as a blank or abnormal disc and stopping reproduction of the disc,” as recited in claim 53.

New claim 54 is fully supported *at least* by FIG. 3 (and its supporting description).

Applicants respectfully submit that Mizumoto fails to teach or suggest any increasing of any gain of amplifier 4 during the disclosed reproduction process (as discussed above).

Thus, Mizumoto cannot teach or suggest *at least* the feature of “if the amplitude of the amplified signal is less than the predetermined value when the pickup is located at the second position, moving said pickup to the third position and increasing a gain by which said signal is obtained to provide a higher gain amplified signal,” as recited in claim 54.

New claims 55-58 are fully supported *at least* by FIG. 2 (and its supporting description).

Applicants respectfully submit that Mizumoto fails to teach or suggest any time dependent operations during the disclosed reproduction process.

Thus, Mizumoto cannot teach or suggest *at least* the feature of, “if the amplitude is lower, counting a time t that has elapsed from the time that the reproduction signal has been properly focused on the disc,” and “determining whether or not the counted time t is longer than a predetermined time,” recited in claim 55.

New claims 59 and 60 correspond to claims 1 and 12 rewritten in “means plus function” format, and are fully supported *at least* by those claims. Applicants respectfully submit that new claims 59 and 60 are patentable over Mizumoto, *at least* for the reasons discussed above.

New claim 61 is fully supported at least by FIG. 2 (and its supporting description). As discussed above, Applicants respectfully submit that Mizumoto fails to teach or suggest any ability for the disclosed reproduction process to include any focusing feature on a turning disc.

Amendment Under 37 C.F.R. § 1.111
U.S. Appln. No.: 09/749,631

Attorney Docket # Q62040

Conclusion

In view of the foregoing, it is respectfully submitted that claims 1-10 and 12-61 are allowable. Thus, it is respectfully submitted that the application now is in condition for allowance with all of the claims 1-10 and 12-61.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees which may be required to maintain the pendency of this application, except for the Issue Fee, to our Deposit Account No. 19-4880.

Respectfully submitted,



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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 11 are canceled.

The claims are amended as follows:

1. (Amended) An apparatus for reproducing information recorded on a disc, comprising:
a reading device that reads information recorded on said disc, wherein said reading device transmits a reproduction signal towards a said disc such that said reproduction signal reflects off of said disc to produce a reflected reproduction signal and wherein said reading device outputs a read signal based on said reflected reproduction signal; and
a turning device that turns said disc; and
a controller which controls said turning device to turn said disc, and positions said
reading device at a first position within a non-program area of said disc and instructs said reading device to focus said reproduction signal on said disc as said disc turns,
~~wherein said controller determines if said reading device is able to focus said reproduction signal on said disc by at least indirectly evaluating said read signal,~~
wherein, ~~if said reading device is able to focus said reproduction signal on said disc,~~ said controller determines if said read signal output from said reading device has a valid signal level when said reading device is positioned at said first position, when said disc is turning,
wherein, if said read signal does not have the valid signal level when said reading device is positioned at said first position, said controller moves said reading device to a second position

within a program area of said disc while said reproduction signal remains focused on said disc,
when said disc is turning, and

wherein said controller determines if said read signal output from said reading device has
the a valid signal level when said reading device is positioned at said second position.

3. (Amended) The apparatus as claimed in claim 1, wherein said disc comprises a lead-in
area and a program area,

wherein said first position is located ~~beneath~~ in said lead-in area and said second position
is located ~~beneath~~ in said program area.

12. (Amended) An apparatus for reproducing information recorded on a disc, comprising:
a reading device that reads information recorded on said disc and outputs a corresponding
read signal;

a turning device that turns said disc;
a controller that focuses a reproduction signal, which provides the read signal, on said
disc as said disc rotates; and

an amplifier that amplifies said read signal to produce an amplified signal; and wherein:
a said controller which positions said reading device at a first position within a non-
program area of said disc and determines if said amplified signal output from said reading device
has a valid signal level when said reading device is positioned at said first position by evaluating
said amplified signal, as said disc rotates;

wherein, if said amplified signal does not have the valid signal level when said reading device is positioned at said first position, said controller moves said reading device to a second position within a program area of said disc,

wherein said controller determines if said amplified signal output from said reading device has the valid signal level when said reading device is positioned at said second position,
as said disc rotates.

13. (Amended) A method for reproducing information recorded on a disc, wherein a reproduction signal is irradiated towards said disc to produce a corresponding read signal, comprising:

- (a) positioning said reproduction signal at a first position within a non-program area of said disc;
- (b) turning said disc;
- (b) (c) attempting to focus said reproduction signal on said disc, as said disc turns;
- (e) (d) determining if said reproduction signal is focused on said disc by at least indirectly evaluating said read signal;
- (d) (e) if said reproduction signal is focused on said disc, determining if said read signal has a valid signal level when said reproduction signal is positioned at said first position, as said disc turns;
- (e) (f) if said read signal does not have the valid signal level when said reproduction signal is positioned at said first position, moving said reproduction signal to a second position

within a program area of said disc while said reproduction signal remains focused on said disc;
and

(f) (g) determining if said read signal has the valid signal level when said reproduction signal is positioned at said second position, as said disc turns.

18. (Amended) The method as claimed in claim 13, wherein said method further comprises:

(g) (h) if said read signal has the valid signal level when said reproduction signal is positioned at said first position, determining that said disc is one of a completely recorded disc and a digital audio compact disc.

19. (Amended) The method as claimed in claim 13, wherein said method further comprises:

(g) (h) if said read signal has the valid signal level when said reproduction signal is positioned at said second position, determining that said disc is a partially recorded disc.

20. (Amended) The method as claimed in claim 13, wherein said method further comprises:

(g) (h) if said read signal does not have the valid signal level when said reproduction signal is positioned at said second position, determining that said disc cannot be reproduced.

21. (Amended) The method as claimed in claim 13, wherein said operation ~~(d)~~ (e) comprises:

~~(d1)~~ (e1) amplifying said read signal at a gain to produce an amplified signal, wherein said gain has a first gain level; and

~~(d2)~~ (e2) determining if said read signal has the valid signal level when said reproduction signal is positioned at said first position by at least indirectly evaluating said amplified signal.

22. (Amended) The method as claimed in claim 13, wherein said operation ~~(f)~~ (g) comprises:

~~(f1)~~ (g1) amplifying said read signal at a gain to produce an amplified signal, wherein said gain has a first gain level; and

~~(f2)~~ (g2) determining if said read signal has the valid signal level when said reproduction signal is positioned at said second position by at least indirectly evaluating said amplified signal.

23. (Amended) A method for reproducing information recorded on a disc, wherein a reproduction signal is irradiated towards said disc to produce a corresponding read signal, comprising:

(a) positioning said reproduction signal at a first position within a non-program area of said disc;

(b) turning said disc;

(c) focusing said reproduction signal on said disc as said disc rotates;

(b) (d) amplifying said read signal to produce an amplified signal; and
(e) (e) determining if said amplified signal has a valid signal level when said reproduction signal is positioned at said first position by evaluating said amplified signal, as said disc rotates;
(d) (f) if said amplified signal does not have the valid signal level when said reproduction signal is positioned at said first position, moving said reproduction signal to a second position within a program area of said disc;
(e) (g) determining if said amplified signal has the valid signal level when said reproduction signal is positioned at said second position, as said disc rotates.

24. (Amended) A software program contained on a computer readable medium which is executed by a controller that instructs a reproduction signal to be irradiated towards a disc to produce a corresponding read signal, wherein the software program instructs the controller to perform the operations of:

(a) positioning said reproduction signal at a first position within a non-program area of said disc;
(b) turning said disc;
(b) (c) attempting to focus said reproduction signal on said disc, as said disc turns;
(e) (d) determining if said reproduction signal is focused on said disc by at least indirectly evaluating said read signal;

(d) (e) if said reproduction signal is focused on said disc, determining if said read signal has a valid signal level when said reproduction signal is positioned at said first position, as said disc turns;

(e) (f) if said read signal does not have the valid signal level when said reproduction signal is positioned at said first position, moving said reproduction signal to a second position within a program area of said disc while said reproduction signal remains focused on said disc; and

(f) (g) determining if said read signal has the valid signal level when said reproduction signal is positioned at said second position, as said disc turns.

29. (Amended) The software program as claimed in claim 24, wherein said software program further instructs the controller to perform the operations of:

(g) (h) if said read signal has the valid signal level when said reproduction signal is positioned at said first position, determining that said disc is one of a completely recorded disc and a digital audio compact disc.

30. (Amended) The software program as claimed in claim 24, wherein said software programs further instructs the controller to perform the operations of:

(g) (h) if said read signal has the valid signal level when said reproduction signal is positioned at said second position, determining that said disc is a partially recorded disc.

31. (Amended) The software program as claimed in claim 24, wherein said software program further instructs the controller to perform the operations of:

~~(g)~~ (h) if said read signal does not have the valid signal level when said reproduction signal is positioned at said second position, determining that said disc cannot be reproduced.

32. (Amended) The software program as claimed in claim 24, wherein said operation ~~(d)~~ (e) comprises:

~~(d1)~~ (e1) amplifying said read signal at a gain to produce an amplified signal, wherein said gain has a first gain level; and

~~(d2)~~ (e2) determining if said read signal has the valid signal level when said reproduction signal is positioned at said first position by at least indirectly evaluating said amplified signal.

33. (Amended) A software program contained on a computer readable medium which is executed by a controller that instructs a reproduction signal to be irradiated towards a disc to produce a corresponding read signal, wherein the software program instructs the controller to perform the operations of:

(a) positioning said reproduction signal at a first position within a non-program area of said disc;

(b) turning said disc;

(c) focusing said reproduction signal on said disc, as said disc rotates;

~~(b)~~ (d) amplifying said read signal to produce an amplified signal; and

(e) (e) determining if said amplified signal has a valid signal level when said reproduction signal is positioned at said first position by evaluating said amplified signal, as said disc rotates;

(e) (f) if said amplified signal does not have the valid signal level when said reproduction signal is positioned at said first position, moving said reproduction signal to a second position within a program area of said disc;

(e) (g) determining if said amplified signal has the valid signal level when said reproduction signal is positioned at said second position, as said disc rotates.

Claims 34-61 are added as new claims.